

DIGITIZER'S 8 MODES OF OPERATION

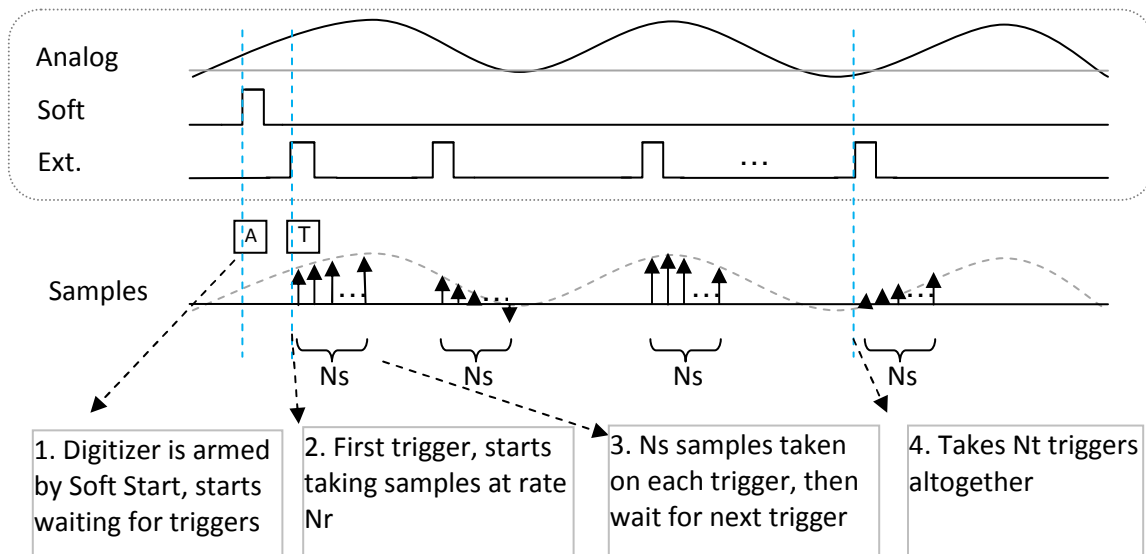
Mode 0 (code: 0x4) – software arm, externally defined sample times

Used Variables:

- N_s – number of samples per trigger,
- N_t – number of triggers,
- N_r – rate of samples

Digitizer will be armed after some condition in software and will take N_s samples ($N_s \geq 1$ programmable) per each external trigger. When the number of triggers will count N_t , the Digitizer will stop digitizing and will set the VME interrupt request signal. This signal will release by VME acknowledge cycle (ROAK).

Graphical Description of Mode 0



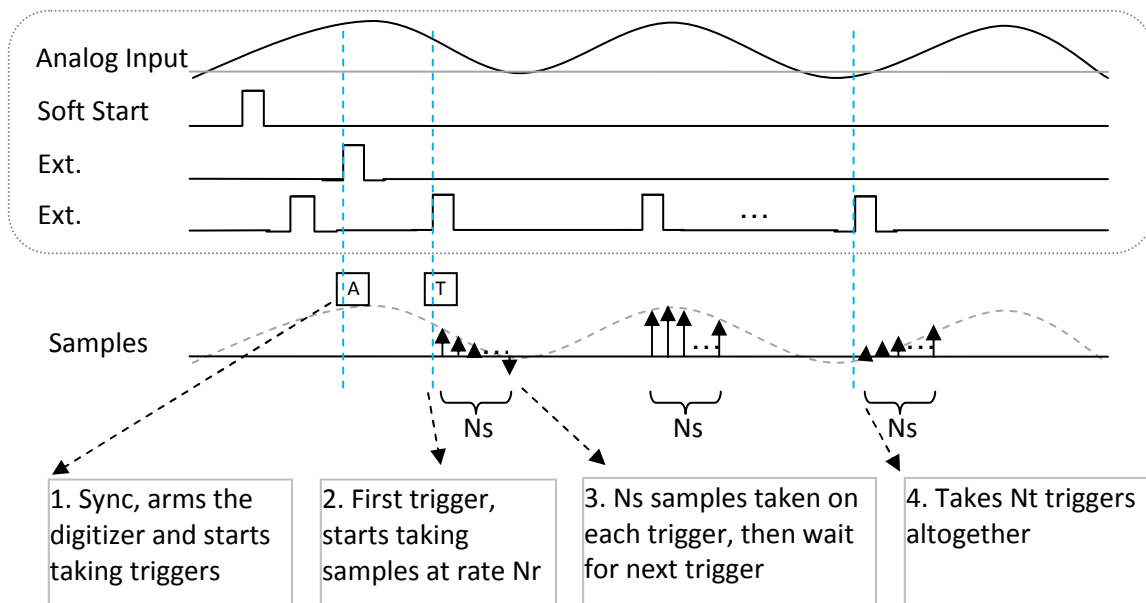
Mode 1 (code: 0xC) – external arm, externally defined sample times

Used Variables:

- N_s – number of samples per trigger,
- N_t – number of triggers,
- N_r – rate of samples

Digitizer will be armed by external SYNC signal and will take N_s samples ($N_s \geq 1$, programmable) per each external trigger. When the number of triggers will count N_t , the Digitizer will stop digitizing and will set the VME interrupt request signal. This signal will release by VME acknowledge cycle (ROAK).

Graphical Description of Mode 1



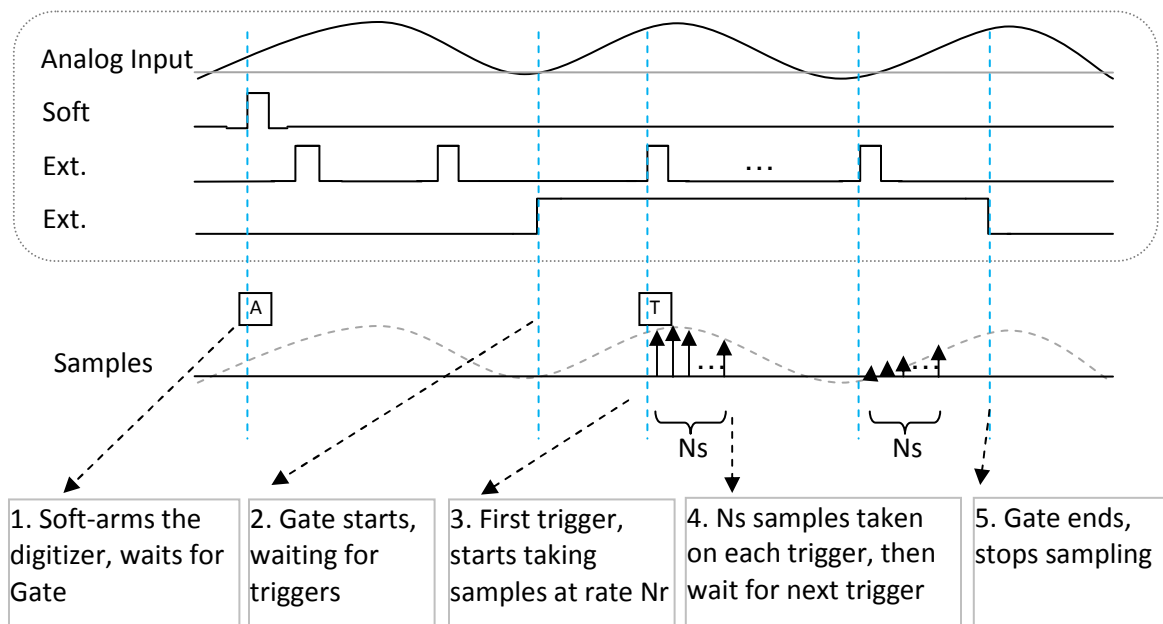
Mode 2 (code: 0x6) – software arm, externally defined sample times within Gate

Used Variables:

- N_s – number of samples per trigger,
- N_r – rate of samples

Digitizer will be armed after some condition in software and ready to take N_s samples ($N_s \geq 1$, programmable) per each external trigger for duration of external Gate signal. Digitizer will stop digitizing after the end of gate signal and will set the VME interrupt request signal. This signal will release by VME acknowledge cycle (ROAK).

Graphical Description of Mode 2



Mode 3 (code: 0xE) – external arm, externally defined sample times within Gate

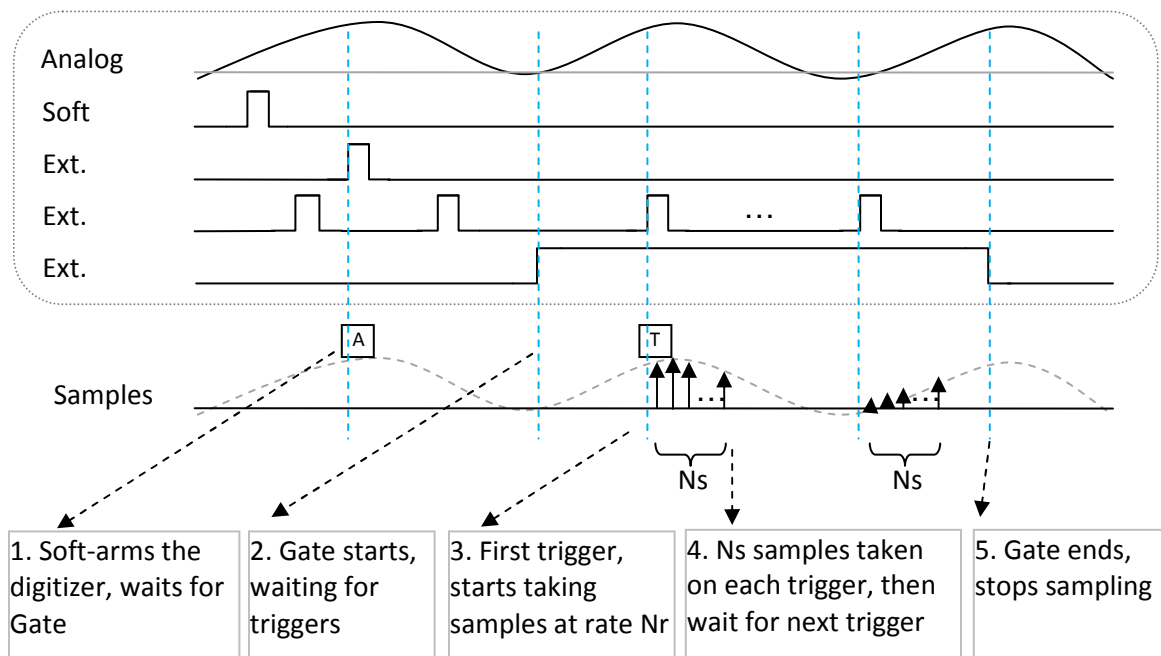
Used Variables:

- N_s – number of samples per trigger,
- N_r – rate of samples

Digitizer will be armed by external SYNC signal and ready to take N_s samples ($N_s \geq 1$, programmable) per each external trigger for duration of external Gate signal.

Digitizer will stop digitizing after the end of gate signal and will set the VME interrupt request signal. This signal will release by VME acknowledge cycle (ROAK).

Graphical Description of Mode 3



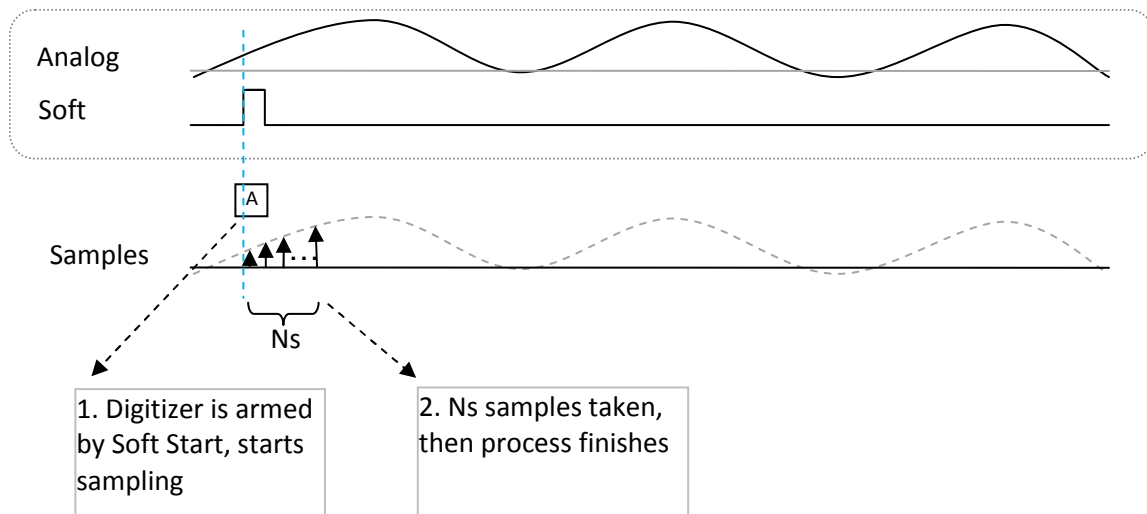
Mode 4 (code: 0x0) – scope with software arm

Used Variables:

- N_s – number of samples per trigger,
- N_r – rate of samples,

Digitizer will be armed after some condition in software and then will take N_s samples ($N_s \geq 1$, programmable). After that it will set the VME interrupt request signal. This signal will release by VME acknowledge cycle (ROAK).

Graphical Description of Mode 4



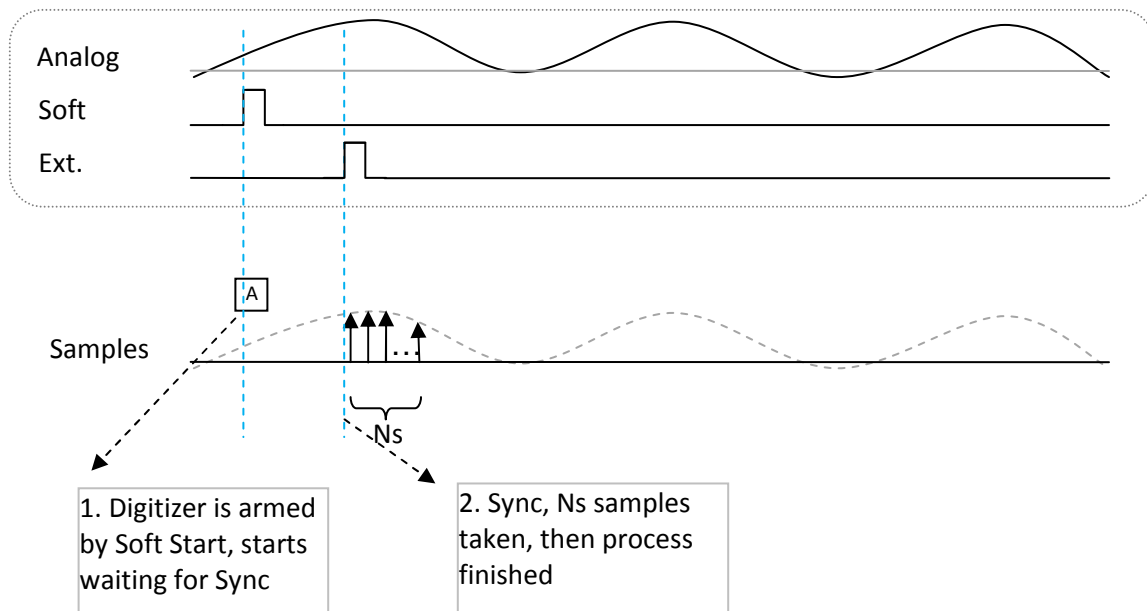
Mode 5 (code: 0x8) – scope with external arm

Used Variables:

- N_s – number of samples per trigger,
- N_r – rate of samples,

Digitizer will be armed by external SYNC signal and will take N_s samples ($N_s \geq 1$, programmable). After that it will set the VME interrupt request signal. This signal will release by VME acknowledge cycle (ROAK).

Graphical Description of Mode 5



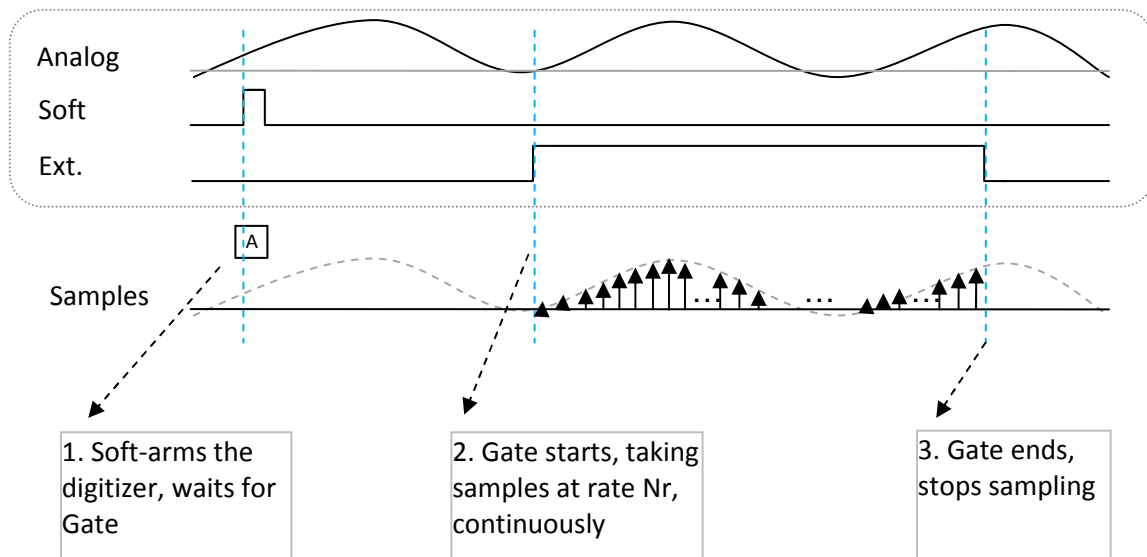
Mode 6 (code: 0x2) – scope with software arm during external Gate

Used Variables:

- Nr – rate of samples,

Digitizer will be armed after some condition in software and will take samples for duration of external Gate signal. Digitizer will stop digitizing after the end of gate signal. After that it will set the VME interrupt request signal. This signal will release by VME acknowledge cycle (ROAK).

Graphical Description of Mode 6



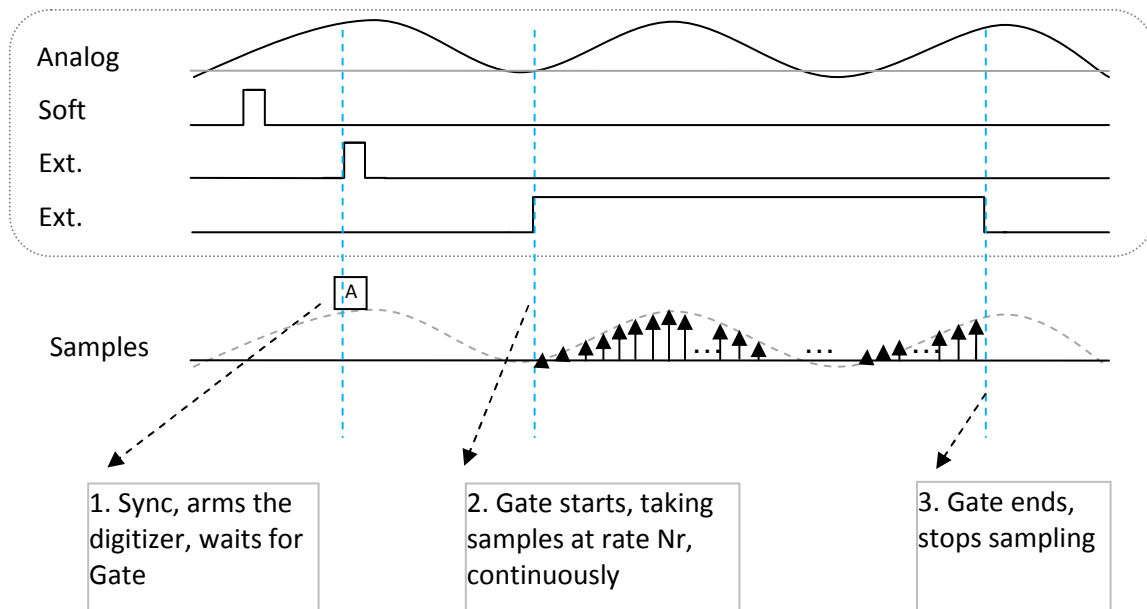
Mode 7 (code: 0xA) – scope with external arm during external Gate

Used Variables:

- Nr – rate of samples,

Digitizer will be armed by external SYNC signal and will take samples for duration of external Gate signal. Digitizer will stop digitizing after the end of gate signal. After that it will set the VME interrupt request signal. This signal will release by VME acknowledge cycle (ROAK).

Graphical Description of Mode 7



The following graph shows the comparison between the eight different modes of operation:

